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Internet Resources and Humanities Reference Service

INTRODUCTION

We are beginning a great format shift from print and paper format to the electronic format. Evidence of this shift appears in the physical space of our libraries in the form of CD-ROM databases and online catalogs. But the shift is also changing libraries from places that own or hold informational materials to places where researchers can access information. While dial-up database services like DIALOG and BRS are familiar to all of us, the global computer networks gaining popularity in academia are adding a new dimension to the electronic format shift.

Information resources produced by scholars and distributed via the Internet infrastructure, outside of the traditional print publication mechanisms, are being created to support humanities research; and the means to meet the challenges posed by these resources are also emerging from the Internet infrastructure itself. Electronic-mail-based conferences (e-conferences) form the core of the scholarly communities on the Internet and are the central mechanism for the exchange of information on network-accessible resources. By using Internet navigation software such as HYTELNET, Gopher, Veronica, archie, Wide Area Information Servers (WAIS), World Wide Web, and the new applications that will follow, librarians can mediate between the user and electronic information resources, just as they have with print resources. Traditionally, the librarian's professional role has been to identify appropriate resources and enhance patrons' access to and use of them. Today, identifying and enhancing access to Internet resources for humanities scholars has become a vital facet of humanities reference service (Kovacs, Schloman, & McDaniel, in press; Stover, 1992).

This paper discusses the information needs of humanities scholars and how humanities reference librarians can use Internet or BITNET resources to fulfil those information needs. Computer networks encompass a vast array of

information resources. Because BITNET is linked to the Internet—albeit with some different functionality—when the term Internet is used in this paper, it refers to both networks.

It is outside the scope of this paper to provide instruction on the basic use of computers and the Internet. Throughout this paper, some instructions for accessing networked resources are given. It is assumed, however, that readers are familiar with basic FTP and Telnet commands; actual command sequences are not provided in all cases. Further information is available in several recent publications, including those by Kehoe (1993), Krol (1992), and Quarterman (1990). For the purpose of this paper, however, some basic concepts that are important in understanding the nature of the resources will be discussed. Computer networks are groups of linked computers. These groups of computers can be relatively small, as in a local area network (LAN), or as large as the global Internet. The software used to connect computers on a LAN might be Ethernet and Appleshare or Novell. The software used to connect computers on the Internet is called TCP/IP (Transfer Control Protocol/Internet Protocol). It allows two basic functions called FTP (File Transfer Protocol) and Telnet that are important in accessing and using network information resources. FTP allows computer files to be transferred over the network. Telnet allows people to use their computers and the network to log into other computers in remote locations.

INFORMATION NEEDS OF HUMANITIES SCHOLARS

Information Needs in the Humanities: An Assessment (Gould, 1988) analyzes information needs in eight humanities disciplines: classical studies, history, art history, literature, philosophy, religion, music, and linguistics. In all eight fields, access to primary resources such as manuscripts, rare books, and unpublished material was identified as important to the research process. Finding aids—indexes, abstracts, bibliographies, and catalogs—were important to researchers looking for primary resources as well as secondary materials such as articles and recent monographs. Locating materials at other libraries and archives, which the scholar could then travel to, was identified as an immediate need. The next step is full-text online access to the primary materials. The scholars surveyed stated a desire for computerized versions of the finding aids in their disciplines as well as full-text versions of the primary documents used in their research. In addition to these general needs, each discipline has specific needs:

- Classical studies scholars stated a need to identify and locate primary texts in Greek and Latin as well as Bible texts.
- Historical scholarship can encompass any time period and includes the use of resources in political science, economics, sociology, and anthropology. In addition, access to unpublished manuscripts and other primary historical sources is critical to history research.
- Art historians need exhibit catalogs, museum bulletins, artists' books, and art newspapers.
- Literature scholars need access to primary and secondary sources in all modern languages, and they often use unpublished material such as diaries and letters

of authors in their research. Literature research sometimes draws on the literature of psychology, anthropology, or other disciplines.

- Philosophy is a field that has changed radically in the 20th century. Recently, scholars in this discipline have been focusing more on the history of philosophy to shape their interpretations. In addition, international bibliographies of philosophical texts are important resources for retrospective research. Unpublished materials such as the original drafts of philosophers' writings have gained more importance because of the new emphasis being placed on the history of philosophy; therefore, catalogs detailing the location and content of the manuscript collections of these philosophers are extremely valuable tools for research in philosophy.
- Religious studies has an expanding focus that includes any human encounter with divinity. Since this field is broadening at such a rapid rate, current bibliographic resources are particularly important. Primary and secondary material in all modern languages are essential resources as are ancient holy texts and unpublished materials such as church histories.
- Music encompasses many subfields such as performance, composition, theory, and the history of music. Naturally, bibliographic resources are important for following the trends in the literature in all these subfields. Music scholars often need access to musical scores, and they are beginning to rely more upon unpublished materials because interest in the history of music has increased. In addition, comprehensive catalogs listing the locations of manuscripts concerning musical history are in much demand.
- Linguistics is a highly interdisciplinary field. Unpublished materials are especially important because this field is changing so rapidly and journal articles are often outdated by the time they are published. Other materials such as dissertations, recordings of speech, videotapes, and language data in machine-readable forms are also important resources.

Gould's findings are supported by other studies. Pankake (1991) reviews several citation studies designed to highlight the types of resources that were most useful to humanities researchers. Overall, the findings reveal that information needs in the humanities cover a broad spectrum ranging from the latest trends in popular culture to texts of ancient Greek manuscripts. Given this diversity, it is difficult to discern a consistent pattern of information use among humanities scholars, except that most require both primary and secondary materials. After identifying the needed material, the researcher must then be able to locate these resources in as efficient a manner as possible. General reference sources also prove invaluable by quickly confirming facts and providing information about grants and foundations.

Wiberley (1991) also emphasizes the diversity of information needs in humanities disciplines while calling attention to some unique behavioral traits humanists display while seeking to meet their information needs. Communication among scholars in the humanities is of vital importance to research in these fields. Since research in the humanities is becoming more specialized, scholars tend to rely upon their private collections of research materials and correspondence with peers to meet most of their information needs—often overlooking the resources available to them at the university library. Academic

librarians should be aware of these unique characteristics and specific information needs of humanists in order to provide more efficient and relevant reference service. By mediating between humanities scholars and Internet resources, librarians can function as part of the humanities scholar's information network.

LOCATING AND IDENTIFYING INTERNET RESOURCES

Humanities reference librarians must make themselves aware of Internet resources. This paper describes five types of Internet resources commonly used by humanities scholars: full-text and bibliographic databases, electronic books and other texts, electronic journals, e-conferences, and online library catalogs. The growth of these resources has led to the development of new distribution mechanisms for them that take advantage of the capabilities of FTP, Telnet, and electronic mail. Network-based storage and distribution mechanisms include the following:

- *E-conferences*: Subscription mechanisms vary with the type of software used to maintain the e-conference. The most common form of e-conference is a discussion maintained via electronic mailing lists software (e.g., listserv). USENET news uses a specific file format and subscribers use "News Reader" software to participate in USENET news e-conference discussions.
- *E-conference archives*: These are databases of all the transactions that have taken place on a given e-conference during pre-established intervals. With the listserv software written by Eric Thomas, the e-conference archives are interactively and batch searchable. Listserv e-conference archives are also retrievable via an e-mail message sent to listserv@<site> that reads GET Filename Filetype. E-conference archives may also be stored at FTP sites, Internet bulletin boards, Gopher servers, or WAIS servers.
- *Fileservers*: Researchers can also retrieve other kinds of texts stored on filesevers via an e-mail message sent to listserv@<site> GET Filename Filetype.
- *Internet-accessible electronic bulletin boards*: These can be accessed using the Telnet command in addition to or instead of the traditional dial-up with modem access.
- *FTP sites*: These are the locations of electronic texts stored in a directory on a computer on the Internet. Researchers use an FTP command to connect to the site and retrieve the texts back to their own computer.
- *Gopher servers*: Gopher servers can store electronic texts and provide links to Internet resources at other sites as well. Researchers use a Gopher client to connect to a Gopher server where they can browse resources stored there or connect to yet other Internet resources. Resources appear as items in hierarchies of lists.
- *WAIS servers*: Electronic texts stored on a server. Researchers use a WAIS client to connect to the WAIS server, identifying and browsing electronic texts and other resources.

Librarians maintain awareness of print resources by reading reviews in journals and from publishers' flyers in the mail. Awareness of Internet resources

can be started via a parallel mechanism. It is essential to subscribe to an e-conference where information on electronic resources in the humanities is exchanged (Kovacs & Kovacs, 1991). The Humanist e-conference, moderated by Allen Renear and Ellen Brennan, is a general clearinghouse for information in the humanities and the use of computers in the humanities. (For more information, contact editors@brownvm or editors@brownvm.brown.edu.)

The Directory of Scholarly E-conferences (Kovacs et al., 1993) provides a classified and indexed list of e-conferences in the humanities as well as other disciplines. It also provides subscription instructions for all the different types of e-conferences. E-conferences are also excellent sources of information about resources *not* available over the Internet. They have been used to answer many types of humanities reference questions concerning, for example, other scholars doing research on the Greek translation of the Epistles of St. Paul, specialized translation instruction, or use of VHS movies in teaching literature.

There are also a number of Internet tools that can be used to locate Internet resources:

- **HYTELNET:** Hypertext front-end software developed by Peter Scott (scott@sklib.usask.ca) and Earl Fogel (fogel@jester.usask.ca) of the University of Saskatchewan used to access a directory of Internet-accessible resources compiled by Billy Barron (billy@vaxb.acs.unt.edu) of the University of North Texas (PC, UNIX, and VMS versions are available via anonymous FTP from access.usask.ca or 128.233.3.1 in the /pub/hytnet directory).
- **LIBS:** Front-end software developed by Mark Resmer of Sonoma State University to access the directory of Internet-accessible resources compiled by Art St. George of the University of New Mexico.
- **Gopher:** Interface software for an Internet-distributed database developed at the University of Minnesota, which allows the storage of electronic texts for interactive searching, viewing, and retrieval via nested lists (for more information, address an e-mail message to boombox.micro.umn.edu).
- **Veronica:** A part of the Gopher server that allows keyword and Boolean searching through the universe of Gopher servers to identify and connect to Internet resources that are stored in or linked to Gopher servers.
- **WAIS and archie:** Tools for locating electronic resources via keyword searches.
- **World Wide Web:** A project to develop a searchable hypertext Internet-distributed database on a global scale.

The HYTELNET hypertext directory of Internet resources and the Gopher software with the Veronica finding tool are particularly valuable and easy to use.

ESTABLISHING THE USE OF INTERNET RESOURCES IN REFERENCE SERVICE

In order to use Internet resources in reference services, three basic needs must be met: equipment, awareness, and time. Librarians must have access to a microcomputer or dumb terminal that has a connection to the Internet. This could be a microcomputer running TCP/IP that is networked into a campus, state, or regional network; or it could be a microcomputer with telecommunications

software such as Kermit or Procomm dialed up to a mainframe, minicomputer, or workstation that is running TCP/IP and networked into a campus, state, or regional network. Dumb terminals that are directly cabled to a mainframe, minicomputer, or workstation that is running TCP/IP and networked into a campus, state, or regional network are also usable.

Ready reference or referral uses of Internet resources require that the equipment be located at the reference desk or in an adjacent area. Having the appropriate equipment in the librarian's office makes it much easier and more likely that Internet resources can be integrated into reference work by appointment, allowing the librarian to provide in-depth Internet reference assistance to patrons.

Imagine the Internet as a new library reference center. The first thing to do is to look over the center, identify the familiar sources, and get a general idea of what is available, what "color" it is, and approximately where it is located. Also become aware of the tools for finding the sources in the reference center.

In order to select and use Internet resources to answer reference questions, librarians must have directories and catalogs of Internet resources, or tools such as HYTELNET, readily accessible at the reference desk. Many libraries have access to a campus or library Gopher server on which selected resources have been linked.

Awareness of the resources means more than just knowing they exist. Librarians need to have some knowledge of how stable and available a given resource is to be able to decide whether a question can be answered immediately or whether it will require an appointment with the library user. For example, most Internet-accessible libraries are reliably stable and available, so it would be appropriate to use them to answer a question immediately or to instruct the library user in using them. Several of the Internet databases have unpredictable down times and might be unavailable, thus making it necessary to make an appointment when the librarian is off the busy desk in order to conduct the search. E-conference archives are reliably available but may take more time to search than is possible at the desk and should be searched by appointment. The key is to make decisions based on experience and knowledge of the resources.

Time is a premium. It requires time for librarians to develop awareness of Internet resources and more time to introduce and instruct library users. Currently, the reference desk is not the most suitable place to do this. Rather, Internet resources are more efficiently introduced where time has been formally allotted to do so, such as specially arranged orientation sessions, workshops, or tutorials.

Ideally, librarians would establish their own local menu, using Gopher or World Wide Web or similar software, of Internet resources suitable for their library users. This saves time for everyone. Library users may even be able to explore without assistance if guides are provided.

Using Internet resources as part of reference services is logical and very possible when done with appropriate equipment, awareness, and sufficient time.

INTERNET RESOURCES IN THE HUMANITIES

This section describes selected Internet resources of interest to humanities scholars in each of the eight disciplines described earlier. These examples show

that there are Internet resources available that fulfil the kinds of information needs identified by Gould (1988) for humanities scholars.

Classical Studies

Although classical studies scholars will find useful Internet resources among those described in all the following disciplines, the Philosophy E-texts Project and the *Electric Mystics Guide to the Internet* provide details about Internet resources that will be of particular interest to classical studies scholars. There is also one classical studies e-conference listed in Kovacs et al. (1993); however, many e-conferences in the other disciplines listed would be of interest to classical studies scholars as well.

History

Historians rival literature scholars as some of the most active users and creators of Internet resources. There are 28 history e-conferences listed in Kovacs et al. (1993). Don Mabry at Mississippi State University (djml@ra.msstate.edu) brought to the authors' attention the HISTOWNR e-conference's History Network project. The participating historians are setting up FTP sites in the United States and Europe to provide access to primary historical documents in electronic format. Among the electronic texts already available via FTP to <ftp.msstate.edu> are primary historical documents (e.g., diaries of the Gulf War), databases and bibliographies of historical resources, the texts of historical documents (e.g., Articles of Confederation, Bill of Rights, Mayflower Compact, Iroquois Constitution), and software (free- or shareware).

Another interesting history resource is the Martin Luther King, Jr. Bibliography at Stanford University. The MLK Bibliography lists approximately 2,700 bibliographic citations to works by or about Martin Luther King, Jr. and the civil rights movement. This bibliography was compiled by staff of the Martin Luther King, Jr., Papers Project as a first step in preparing to publish King's works. It is intended to help both the student and the scholar traverse the rich and varied terrain of primary and secondary historical, sociological, and journalistic sources on King and the Black freedom struggle. (This information was taken from the HYTELNET directory.) The Martin Luther King Archives are available via Telnet to [forsythetn.stanford.edu](telnet:forsythetn.stanford.edu) or 36.54.0.12; account: socrates; terminal: VT100; response: MLK.

RLIN makes available the AMC (Archives and Manuscripts) database. The AMC is progressing towards a union catalog of archives and manuscript collections. Once you are telnetted to [rlg.stanford.edu](telnet:rlg.stanford.edu) and logged in, type CALL RLIN—Activity CAT—select file AMC.

Art History

Because of its emphasis on visual and plastic resources, art is a discipline that is very difficult to work with in the current technological state of the Internet. In the future, when high-speed transmission connections are the norm, art images will be more freely exchanged across the Internet. Currently, researchers

in art are discussing mechanisms for making art available over the networks through a variety of formats that encode the images for transmission. There are 27 e-conferences on different art-related topics listed in Kovacs et al. (1993).

The staff of the Carnegie-Mellon Libraries have developed a database called Archpics (Pisciotta, 1993). Archpics is a finding tool for architectural drawings, photographs, and other art images available in archival storage and in books in Carnegie-Mellon Libraries collections. (Details for Internet access to Archpics may be obtained from Henry A. Pisciotta, Head, Fine Arts and Special Collections at Carnegie Mellon University Libraries, Frew Street, Pittsburgh, PA 15213.)

Literature

Literature scholars are very active on the Internet. Kovacs et al. (1993) list 33 literature e-conferences. In addition, the Gutenberg Project founded by Michael Hart (hart@vmd.cso.uiuc.edu) has been putting electronic texts of public domain books on the Internet. The locations of these electronic books can be identified through the HYTELNET software and many Gopher servers. Other typical resources include the American and French Research on the Treasury of the French Language (ARTFL) database and Dartmouth's Dante Project and Shakespeare databases.

ARTFL is located at the University of Chicago. It is a searchable full-text database of the works of major French authors and is useful to scholars doing textual analysis of French literature. Users of ARTFL pay an annual subscription fee. The database is accessible to researchers or libraries by telnetting to artfl.uchicago.edu and logging in with their assigned user id and password. ARTFL can be browsed by using the user id GUEST and the password SUGGEST. (For more information, contact Mark Olson, Department of Romance Languages and Literatures, University of Chicago [mark@gide.uchicago.edu].)

The Dante and Shakespeare full-text databases are located at Dartmouth College. Researchers can telnet to lib.dartmouth.edu or 129.170.16.11 to search either database as well as other full-text databases. (For more information, contact Katharina Klemperer [kathy.klemperer@dartmouth.edu].) SHAKSPER: The Global Electronic Shakespeare Conference is an international electronic conference for Shakespearean researchers, instructors, students, and those who share their interests and concerns. Like the national and international Shakespeare Association conferences, SHAKSPER offers announcements and bulletins, scholarly papers, and the formal exchange of ideas, but SHAKSPER also offers ongoing opportunities for spontaneous informal discussion, eavesdropping, peer review, and a fresh sense of worldwide scholarly community. The SHAKSPER fileserver offers conference papers and abstracts, an international directory of Shakespeare institutes, biographies of conference members, and a variety of announcements and bibliographies. Members of a number of seminars at the upcoming Shakespeare Association of America Conference will find their colleagues ready to share papers, comments, and strategies in advance. The participants in SHAKSPER are collaborating to place other authoritative versions of Shakespeare's works on the Internet. SHAKSPER (shaksper@utoronto) is edited by Dr. Hardy M. Cook (hmcook@boe00.minc.umd.edu).

Hundreds of other electronic full-text projects are listed in the Georgetown E-Text Catalog available through Georgetown University's Gopher server or via FTP to [guvax.georgetown.edu](ftp://guvax.georgetown.edu) or 141.161.1.2 in the directory `cpet—projects—in—electronic—textvia`. Also available (through RLIN) is the Eighteenth Century Short Title Catalog. Researchers can telnet to [rlg.stanford.edu](telnet://rlg.stanford.edu), and once logged in, type CALL RLIN (ESTC).

Philosophy

The *Electronic Texts in Philosophy* bibliography, compiled by Leslie Burkholder, CDEC, Carnegie Mellon University, for the APA Subcommittee on Electronic Texts in Philosophy, contains hundreds of projects. The bibliography is available by addressing an e-mail message to listserv@brownvm (on BITNET) or listserv@brownvm.brown.edu (on Internet), leaving the subject line blank. The text of the e-mail message must read `get philosfy etexts`. (For more information, contact David Owen [owen@arizrvax].)

Religion

The *Electric Mystic's Guide to the Internet: A Complete Bibliography of Networked Electronic Documents Online Conferences, Serials, Software and Archives Relevant to Religious Studies*, compiled by Michael Strangelove, Department of Religious Studies, University of Ottawa (441495@uottawa or 441495@acadvm1.uottawa.ca) is a very comprehensive source of information about Internet resources for religious studies and philosophy scholars. The *Electric Mystics Guide* is available via FTP to [pandal.uottawa.ca](ftp://pandal.uottawa.ca) or 137.122.6.16 in the directory `pub/religion`. It is also available from the `listserv` fileserver for the contents: Religious Studies Publication Electronic Journal, at listserv@uottawa or listserv@acadvm1.uottawa.

Music

Music scholars are making active use of the Internet. There are 24 music-related e-conferences listed in Kovacs et al. (1993) through which music researchers are sharing research and resources. (Kara Robinson [krabinso@kentvm or krabinso@kentvm.kent.edu] is compiler of the music section of the *Directory of Scholarly E-Conferences*.) For example, the TML-L (Thesaurus Musicarum Latinarum database for Latin music theory) e-conference edited by Thomas J. Mathiesen (mathiese@iubacs) is working on and discussing the TML database.

Linguistics

Linguists are also a presence on the Internet. The e-conference LINGUIST moderated by Anthony Aristar (aristar@tamuts.tamu.edu) and Helen Dry (hdry@emunix.emich.edu) is an international discussion of linguistics. Conference members share linguistics analysis software and information. There is also a Linguists nameserver, which serves as a directory of linguists on the Internet. Norval Smith (linguist-request@uniwa.uwa.oz.au) is the contact for the Linguist nameserver.

General

Internet-accessible library catalogs have immediate uses for scholars in all eight areas. There are Internet-accessible library catalogs all over the world that have been used to answer many reference questions, including those related to, for example, archival cataloging of correspondence in the Wisconsin Historical Archives; bibliographic verification of French, Spanish, German, and Lithuanian titles; and publications for French, German, and Slavic literature scholars. These scholars had already checked the standard reference books, and in the case of the literature scholars, had checked OCLC and RLIN.

RLIN has some special databases for humanities resources. It is of interest to humanities scholars because it provides access to primary documents, rare books, and archival collections. Although it is a fee-based service, the pricing structure is very reasonable. RLIN is available via Telnet to rlg.stanford.edu; log in with the account number and password that is used in the traditional dial-up process. LEXIS/NEXIS, DIALOG, and OCLC's FirstSearch and Epic services are also accessible over the Internet.

CONCLUSIONS

There are many resources available for humanities research on the Internet, and new tools and resources will be added in the future. Librarians have the opportunity to provide service to scholars in this area by identifying and referring scholars to appropriate and useful Internet resources. In a survey of 58 library and information science e-conferences conducted in spring 1992, 37.5% of those surveyed had used Internet resources in providing reference services (Kovacs & Robinson, in press). As Internet resources become part of the mainstream of reference service, librarians are faced with a new challenge. Humanities reference librarians are demonstrating that they will meet this challenge.

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